In the claims:

1.   A network system for a network having plural nodes connected, wherein

a node belonging to said network transmit a learning frame periodically to a path opposite to that in which a main signal frame flows.

2.   The network system as set forth in claim 1, wherein

said node

learns a forwarding tag to be added according to said learning frame.

3.   A network system for a network having plural nodes connected, wherein

a node belonging to said network is provided with:

a learning frame management unit which refers to a MAC SA table cache to determine whether a learning frame transmission request is made or not, and

a MAC SA table cache which stores a source MAC address (MAC SA) which has made a learning frame transmission request.

4.   The network system as set forth in claim 3, wherein

said nodes are provided with:

an aging request acceptance unit which ages of

5   said MAC SA table cache, and

a transmission request unit which makes a

learning frame transmission request to a CPU.

5.   The network system as set forth in claim 4,

wherein

said nodes

have a learning management program which conducts

5   a learning frame process.

6.   A network system for a network having plural

nodes connected, wherein

a node belonging to said network is provided with

a learning management program which conducts a learning

5   frame process.

7.   The network system as set forth in claim 3,

wherein

said node

has an equipment control program which conducts a

5   variety of configuration.

8.   The network system as set forth in claim 3,

wherein

said node

is provided with a frame type judgment unit which

5   judges an input frame.

9.   The network system as set forth in claim 3,
wherein

a node belonging to said network is provided
with:

5   an aging control unit which ages an entry to be
aged, and

an aging management table which stores an entry
to be aged.

10.   The network system as set forth in claim 3,
wherein

said node is provided with

a MAC forwarding table memory which stores an

5   output port for a destination MAC address (MAC DA) and

tag operations.

11.   The network system as set forth in claim 3,
wherein

said node is provided with

a broadcast table memory which stores an output

5   destination port at the time of broadcasting to a tag.

12.   The network system as set forth in claim 3,
wherein

said node is provided with

a tag forwarding table memory which stores an

5   output port for a forwarding tag.

13.   The network system as set forth in claim 3, wherein

said node is provided with

a table, an aging circuit and a forwarding table

5   having a table read/write circuit.

14.   The network system as set forth in claim 3, wherein

said node is provided with

a TAG address management table which stores an

5   address of a forwarding tag on a MAC forwarding table

memory.

15.   A network system for a network having plural nodes connected, wherein

a node belonging to said network

also applies a learning function of Ethernet to a

5   flow which flows asymmetrically.

16.   A learning bridge node for a network having plural nodes connected, wherein

a learning frame is transmitted periodically to a

path opposite to a path in which a main signal frame

5   flows.

17.   The learning bridge node as set forth in claim 16,
wherein

        a forwarding tag to be added is learned by said
learning frame.

5

18.   A learning bridge node of a network having plural
nodes connected, comprising:

        a learning frame management unit which refers to
a MAC SA table cache to determine whether a learning

5   frame transmission request is made or not, and

        a MAC SA table cache which stores a source MAC
address (MAC SA) which has made a learning frame
transmission request.

19.   The learning bridge node as set forth in claim 18,
comprising:

        an aging request acceptance unit which ages a MAC
SA table cache, and

5   a transmission request unit which makes a
learning frame transmission request to a CPU.

20.   The learning bridge node as set forth in claim 19,
comprising

        a learning management program which performs
learning frame processing.

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21.   A learning bridge node for a network having
plural nodes connected, comprising:
        a learning management program which performs
learning frame processing.

5

22.   The learning bridge node as set forth in claim 18,
comprising
        an equipment control program which makes a
variety of configuration.

5

23.   The learning bridge node as set forth in claim 18,
comprising
        a frame type judgment unit which judges an input
frame.

5

24.   The learning bridge node as set forth in claim 18,
comprising:
        an aging control unit which ages an entry to be
aged, and

5
        an aging management table which stores an entry
to be aged.

25.   The learning bridge node as set forth in claim 18,
comprising
        a MAC forwarding table memory which stores an
output port for a destination MAC address (MAC DA) and

5   tag operations.

26.   The learning bridge node as set forth in claim 18,
comprising

        a broadcast table memory which stores an output
destination port at the time of broadcasting to a tag.

5

27.   The learning bridge node as set forth in claim 18,
comprising

        a tag forwarding table memory which stores an
output port for a forwarding tag.

5

28.   The learning bridge node as set forth in claim 18,
comprising

        a forwarding table having a table, an aging
circuit and a table read/write circuit.

5

29.   The learning bridge node as set forth in claim 18,
comprising

        a TAG address management table which stores an
address of a forwarding tag on a MAC forwarding table

5   memory.

30.   A learning bridge node for a network having
plural nodes connected, wherein

        a learning function of Ethernet is applied to a
flow which asymmetrically flows.

31.   A learning method of a network having plural nodes connected, wherein

a node belonging to said network transmits a learning frame periodically to a path opposite to that in which a main signal frame flows.

32.   The learning method as set forth in claim 31, wherein

said node

learns a forwarding tag to be added according to said learning frame.

33.   A learning method of a network having plural nodes connected, wherein

a node belonging to said network:

refers to a MAC SA table cache to judge whether or not a learning frame transmission request is made, and

stores a source MAC address (MAC SA) which has made a learning frame transmission request in said MAC SA table cache.

34.   The learning method as set forth in claim 33, wherein

said node

performs aging of said MAC SA table cache and

5   makes a learning frame transmission request to a

CPU.

35.   The learning method as set forth in claim 34,

wherein

          said node is provided with

          a learning management program which performs

5   learning frame processing.

36.   A learning method for a network having plural

nodes connected, wherein

          a node belonging to said network is provided with

          a learning management program which performs

5   learning frame processing.

37.   The learning method as set forth in claim 33,

wherein

          said node is provided with

          an equipment control program which makes a

5   variety of configuration.

38.   The learning method as set forth in claim 33,

wherein

          said node discriminates an input frame.

39.   The learning method as set forth in claim 33,

wherein

a node belonging to said network

performs aging of an entry to be aged and

5   stores an entry to be aged in an aging management

table.

40.   The learning method as set forth in claim 33, wherein

said node

stores an output port for a destination MAC

5   address (MAC DA) and a tag operation in a MAC forwarding

table memory.

41.   The learning method as set forth in claim 33, wherein

said node

stores an output destination port at the time of

5   broadcasting to a tag in a broadcast table memory.

42.   The learning method as set forth in claim 33, wherein

said node

stores an output port for a forwarding tag in a

5   tag forwarding table memory.

43.   The learning method as set forth in claim 33, wherein

said node is provided with

a forwarding table having a table, an aging

5   circuit and a table read/write circuit.

44.   The learning method as set forth in claim 33,
wherein

said node

stores an address of a forwarding tag on a MAC

5   forwarding table memory in a TAG address management

table.

45.   A learning method for a network having plural
nodes connected, wherein

a node belonging to said network also applies a
learning function of Ethernet to a flow which flows

5   asymmetrically.